Report on the Nova Scotia Health System

H1N1

Lessons Learned

December 2010

Table of Contents

Forward 1

I. Introduction 2
- i. Background on the H1N1 Response 2
- ii. Background on the Lessons Learned Process 4
- iii. Purpose and Scope of the Report 5

II. Recommendations to Support a More Effective System Response to a Pandemic 6
- i. Introduction 6
- ii. Governance and Leadership 6
- iii. Information Sharing 8
- iv. Human Resources 9
- v. Occupational Health 11
- vi. Infection Prevention and Control 12
- vii. Materiels Management 13
- viii. Public Health 14
- ix. Primary Care 15
- x. Acute and Tertiary Care 16
- xi. Continuing Care, Hospice, Palliative and Support Care Services 18

III. Moving Forward 19

IV. Appendices 20
- i. List of "departments" and organizations consulted through the focus groups and surveys 20
- ii. List participants of the Stakeholder Forum 21
- iii. Summary of Findings categorized by Key Themes 22
  - Governance and Leadership (Command and Control) 22
  - Information Sharing and Communication 28
  - Human Resources 34
  - Occupational Health and Infection Control 39
  - Materiels Management 44
  - Public Health 46
  - Primary Care 52
  - Acute and Tertiary Care 57
  - Continuing Care, Hospice, Palliative and Support Care Services 61

Forward

IN APRIL 2009, Nova Scotia became the first province in Canada to have a confirmed case of H1N1. In the spring and fall of 2009, the health system in Nova Scotia was working hard to reduce the spread of H1N1 and care for those ill with flu symptoms.

After the first wave of H1N1 in the spring of 2009, Nova Scotia's health system – including the departments of Health Promotion and Protection and Health, district health authorities, the IWK Health Centre and other organizations – reviewed the pandemic response, identified areas for improvement and made changes to ensure the health system was ready to respond to an expected second wave of H1N1.

Following H1N1's second wave in the fall of 2009, the health system again undertook an extensive lessons learned process. This process included health care professionals, government departments and organizations involved in the health system response to H1N1 in Nova Scotia.

This document captures the experiences, perspectives, learning and suggestions for improvement for future health system emergency planning.

Through this process and the work done in addressing the Auditor General's recommendations, we continue to enhance an already effective emergency planning process and make improvements where necessary – all with the ultimate goal of protecting the health and safety of Nova Scotians.

I. Introduction

i. Background on the H1N1 Response

Canada experienced a first and second wave of H1N1 (Human Swine Influenza) in the spring and fall of 2009. During this time, Nova Scotia's health system mounted enormous efforts to prepare for and respond to the potential threat of this illness. This included the largest immunization program in the province's history, the mobilization of resources, and the activation of plans to prepare for any potential outcome posed by the disease.

The following information summarizes highlights from the Nova Scotia response including data/statistics related to the epidemiology of the disease, the immunization program, antiviral usage, and primary assessment centres.

H1N1 Epidemiology

- The first wave of the H1N1 outbreak peaked in July 2009; the second wave peaked by the second week of November 2009.
- In the second wave, there were 752 lab-confirmed cases of H1N1, 277 patients were admitted to hospital (42 of these were in ICU), and six deaths occurred in patients with H1N1.
- During the second wave, the rates of lab-confirmed cases were highest in those less than nine years of age and particularly in those less than one year. The lowest rates were in those over 65.
- The rates of hospitalization were highest in the under one year age group followed by those aged one to nine, and then those 50 and over.
- Lab-confirmed cases represent only a small fraction of the true number of cases that occurred throughout the province. This is because at the height of the illness only the most serious cases were being tested for lab confirmation.
- At the height of the second wave, an estimated 27 per cent of all patients who visited emergency rooms had influenza-like illness (ILI).
- At the height of the second wave, sentinel physicians reported approximately 19 per cent of patient visits with ILI, the highest seen in the province over the past five influenza seasons.
- Outbreaks of Influenza A H1N1 were reported in schools and child care centres. A small number of H1N1 outbreaks occurred in long-term care settings.

H1N1 Immunization Program

- The H1N1 immunization campaign was the largest vaccine program ever done in Nova Scotia. The vast majority of immunizations were administered between the last week of October and end of December 2009.
- 703,100 doses of H1N1 vaccine were received in Nova Scotia and distributed across the province.
- Vaccine was administered by a variety of immunizers in a variety of settings:
  - Immunizers: public health nurses, physicians, occupational health and infection control staff in DHAs, private nursing agencies, etc.
  - Settings included community-based clinics, physicians' offices, hospitals, etc.
- The Department of Health Promotion and Protection (HPP) collected individual records of H1N1 immunizations. Based on the information provided, it can be stated with confidence that at least 54 per cent of the population of Nova Scotia older than six months were vaccinated against Influenza A H1N1.
- Vaccine coverage varied by age group and risk factors with the highest coverage in those between six and 35 months of age, and the lowest coverage in the 20- to 24-year-old age group.
- An estimated 64 per cent of pregnant women were immunized against H1N1.

Antiviral Usage

- In response to H1N1, a total of 15,315 courses of antivirals were released from the provincial stockpile. This represents 10 per cent of the total inventory in the provincial stockpile.
- Of this total, 52 per cent (7,973 courses) were dispensed through primary assessment centres, and 48 per cent (7,339 courses) were dispensed from community pharmacies.

Primary Assessment Centres (PACs)

- From November 2 to 29, 2009, a total of 11,420 individuals visited PACs.
- The number of PACs in the province reached a high of 15 during the period of November 12 to 15, 2009.
- At the height of the illness, more than 220 patients were visiting individual PACs on a daily basis.

ii. Background on the Lessons Learned Process

The Department of Health Promotion and Protection (HPP) and the Department of Health (DOH) undertook a lessons learned process from January to April 2010, to explore what worked well, areas for improvement and suggested next steps for further planning related to the response to the second wave of the H1N1 pandemic. The lessons learned process included the following: focus groups with key stakeholders from HPP as well as external partners; a survey with district health authorities (DHAs), branches within the DOH, and officials within government leading the pandemic response; and a stakeholder forum where findings from the focus groups and surveys were reviewed and further developed. A brief description of the various methods used in the lessons learned process is provided below.

Focus Groups

An external consultant was engaged to conduct focus group sessions with staff of HPP, working groups within HPP, and external stakeholders involved in supporting the response. Questions were developed to help guide the discussions, detailed notes were taken at each session, and key themes were identified and compiled into reports (one report for the sessions with HPP and one for the external stakeholders). Appendix i provides a list of the departments and working groups (within HPP), and the key external stakeholders who participated in the focus groups.

Survey

Surveys were developed and administered by Health Services Emergency Management (a branch of HPP and DOH) to the nine DHAs and the IWK Health Centre, branches within the DOH and officials within government leading the pandemic response. The information obtained from the surveys was then analyzed and compiled by an external consultant. Appendix i provides a list of the respondents.

Stakeholder Forum

A stakeholder forum was held on April 28, 2010 where key stakeholders from DHAs and the IWK Health Centre, HPP and DOH came together to review the findings from the focus groups and survey, and to develop recommendations to inform health system planning.

The findings from the focus groups and surveys were summarized into 10 themes including:

- governance and leadership (command and control);
- information sharing (internal and external);
- human resources;
- occupational health;
- infection prevention and control;
- materiels management;
- public health;
- primary care;
- acute and tertiary care; and
- continuing care, hospice, palliative and support care services.

Summaries of the key findings were created for each theme. Participants worked in small groups to review the findings to identify gaps and recommendations for action for the next flu season, pandemic planning and all hazards planning. A list of the stakeholder forum participants is provided in Appendix ii.

iii. Purpose and Scope of the Report

In reviewing this report, it is important to understand and consider the scope of the lessons learned process. While the information collected through the focus groups, surveys and stakeholder forum provided valuable feedback from a diverse array of stakeholders, it was not intended as an evaluation but rather provided the opportunity for key stakeholders involved in the response to share their experiences and learnings and offer suggestions for how to improve future planning.

The expectation is organizations that were involved in supporting the response to the second wave of the H1N1 pandemic will complete their own review and evaluation process to identify internal issues and develop strategies to improve their own operational planning.

The intent of this report is to provide a high level overview of the system level issues consistently identified during the lessons learned process.

II. Recommendations to Support a More Effective System Response to a Pandemic

i. Introduction

Following the stakeholder forum, the summaries that were completed for review at the session were updated to include feedback provided by forum participants (Appendix iii). Below is a high level overview of the findings from a system perspective related to each of the 10 themes, including what went well, areas for improvement and system recommendations. System level recommendations refer to recommendations across the continuum of the health system (e.g., public health, primary care, ambulatory care, acute and tertiary care, continuing and palliative care, etc.) as well as at various levels (e.g., provincial, DHA).

ii. Governance and Leadership

Governance and leadership includes the organizational and governance structures put in place in preparation for the second wave of H1N1, as well as issues related to accountabilities, roles and responsibilities, decision-making and leadership.

What Went Well

- Effective leadership at the provincial level
- Structures established at the provincial and local level that had various functions (e.g., strategic planning, operational planning, scientific advice)
- Engagement of a variety of stakeholders with diverse expertise
- Collaborative decision-making informed by science/epidemiology as well as local needs and context
- Collaboration with various stakeholders in developing and operationalizing pandemic plans, and a history of partnering facilitated problem solving to address emerging issues
- Effective coordination and communications with the Public Health Agency of Canada

Areas for Improvement

- Lack of communication of the plan to address the psychosocial needs of the community and providers
- Lack of clarity among some stakeholders of the roles and responsibilities of the various structures, and decision-making processes
- Gaps in expertise (e.g., human resources, occupational health)
- Lack of an integrated information management system to support health system planning, program and services delivery, which became more evident during the response

System Recommendations

- Conduct all hazards planning using a systems approach
  - Review who needs to be involved in planning and ensure all key stakeholders are represented and contribute to planning
  - Use lessons learned and evaluation from the response in future planning
  - Include mock scenarios in all hazards planning
  - Build and strengthen partnerships to support all hazards planning
- Review and evaluate the psychosocial support provided during the pandemic response to identify strengths, gaps/challenges and actions to improve psychosocial support during emergencies
  - Ensure psychosocial support is included in future all hazards planning and emergency preparedness
- Review and evaluate emergency planning, preparedness and management to identify gaps and develop strategies to address the gaps
- Review and define structures required for the system during an emergency:
  - Clearly define roles, responsibilities and relationships
  - Ensure processes to facilitate participation of all stakeholders
  - Ensure all expertise is included in all hazards planning
  - Ensure decision-making is clearly defined and that there is appropriate analysis to facilitate evidence-based decision-making
- Ensure research and ethics guide planning
- Ensure business continuity planning and implementation is appropriately resourced across the system, and develop guidelines for moving from business as usual to an emergency response
- Ensure volunteer recruitment, management and support are included within all hazards planning

iii. Information Sharing

Information sharing includes internal communication and information sharing within the departments of Health and Health Promotion and Protection, DHAs and the IWK Health Centre. In addition, this section encompasses external communication and information sharing with key stakeholders involved in supporting the response, the media and Nova Scotians.

What Went Well

- Internal processes and mechanisms were established across the system to share information, provide updates, and facilitate communication with internal and external stakeholders and the media (e.g. communication plans, regular teleconferences, allocation of human resources with expertise in communication, identification of a point person, media events, briefings, identifying effective spokespeople within HPP and DOH, HealthLink 811)
- Information was generally comprehensive and HPP and DOH were generally responsive to inquiries from health system partners, stakeholders, media and Nova Scotians
- Public communication and education was generally comprehensive and timely

Areas for Improvement

- Lack of coordination within HPP and DOH contributed to a duplication and an overwhelming amount of information being disseminated to the health system
- Lack of coordination and consistency in communication with and between DHAs
- Lack of consistency in messages from various stakeholders (e.g., HPP and DOH to the DHAs and the IWK Health Centre, between the province and the Public Health Agency of Canada, HealthLink 811, family physicians)
- Lack of coordination and processes for document management and updates
- Lack of processes and infrastructure to communicate with some external stakeholders (e.g., private sector employers), and communication to external stakeholders was not always timely
- Lack of clarity of some messages to the public (e.g., priority groups)
- Lack of processes and tools to communicate with the local level and front-line workers, and some messages were not timely
- Inadequate use of social media
- Lack of clarity of the communication plan for First Nations as a priority group

System Recommendations

- Review communication processes across the health system used during the response and develop a comprehensive communication and document management plan and tools for an all hazards approach, with the aim of streamlining processes, ensuring consistent information, and timely dissemination
- Review and continue to identify key stakeholders and develop strategies to ensure effective and timely communication with these groups
- Review strategies for communicating with private sector employers and develop a plan to ensure effective communication with this sector
- Review processes used to communicate with the media, continue to use effective strategies and make improvements as required
- Review the role of and develop strategies to use social media to communicate with the public during an emergency event

iv. Human Resources

Human resources includes issues such as planning for human resource requirements with internal and external stakeholders, capacity to respond to the second wave of H1N1, including redeployment of staff, and sick leave policies.

What Went Well

- The signing of the Good Neighbour Protocol that permits the redeployment of healthcare workers across union lines in time of an emergency
- The establishment of processes to facilitate recruiting additional human resources
- Staff with expertise in emergency preparedness and planning in some DHAs (although this was often identified as a gap)
- Using online supports such as webinars to build awareness, knowledge and skills of diverse stakeholders across the system
- The flexibility and dedication of staff across the system

Areas for Improvement

- Lack of psychosocial support for staff during the response (work was done re: psychosocial planning but more is needed)
- Lack of system structures and planning processes (both provincially and locally) to ensure coordinated, comprehensive, consistent and timely resolution of HR issues (e.g., hiring processes, sick leave policy, policies for remuneration of providers recruited to assist with the response)
- Lack of human resource capacity within the system and inconsistency in capacity across DHAs, particularly related to emergency planning and preparedness

System Recommendations

- Create a provincial Emergency Coordinating Committee in collaboration with key stakeholders to support the development of effective processes and structures to address human resource (HR) issues during an emergency event (e.g. sick leave policies, hiring practices, policies for remuneration)
- Engage HR stakeholders in all hazards planning in a timely manner
- Review the capacity of the health system for emergency preparedness (particularly at the DHA and IWK level) and address gaps (e.g. lack of expertise, lack of human resources, recruitment and support of volunteers)
- Compile an inventory of staff (and retired employees) skills and assets within the system and provide appropriate training to help ensure effective utilization, redeployment and recruitment of potential staff resources during an emergency
- Review and use the Good Neighbour Protocol to help ensure effective use and redeployment of staff across the system during an emergency
- Use innovative approaches to build awareness and support exchange of knowledge among staff, including online formats (e.g. webinars), cross training, etc.
- Engage HR and mental health resources to support the psychosocial needs of staff during an emergency response
- Create a provincial Human Resources Emergency Coordinating Committee in collaboration with key stakeholders to review the detailed lessons learned recommendations to support the development of effective processes and structures to address HR issues during an emergency event (e.g. sick leave policies, hiring practices, policies for remuneration)
- Review the capacity of the health system for emergency preparedness (particularly at the DHA and IWK level) and address gaps (e.g. lack of expertise, lack of human resources, improved recruitment and support of volunteers)
- Engage HR and mental health resources to support the psychosocial needs of staff during an emergency response

v. Occupational Health

This section includes occupational health practices, guidelines and structures, personal protective equipment, and fit testing.

What Went Well

- Some DHAs and external stakeholders had effective occupational health structures and processes, which were used effectively
- Some departments within the health system and external stakeholders developed effective processes and protocols related to N95 respirators (e.g. education, fit testing)
- Processes were developed to facilitate staff immunization

Areas for Improvement

- Lack of capacity (e.g. structures, policies and procedures, human resources) within the health system to support occupational health, resulting in lack of coordination and inconsistencies in practice
- Inconsistency in messages and position on N95 respirator requirements between key stakeholders and concerns about adequate supplies
- Fit testing was not timely and processes varied
- Lack of clarity related to priority groups for staff immunization
- Acceptance of evidence-based personal protective equipment recommendations

System Recommendations

- Review and/or develop structures for occupational health provincially and at the DHA level, and clarify the role of the Joint Occupational Health and Safety Committee, including coordination and communication
- Review policies and practices for occupational health at the provincial and DHA level and address identified gaps
- Review capacity at provincial and DHA levels for occupational health (e.g. human resources, expertise) and address identified gaps
- Develop a process/policy in collaboration with key stakeholders (e.g. unions, Department of Labour and Workforce Development) to clarify provincial requirements related to N95 respirators and clearly communicate the outcome
- Identify fit testing policies and procedures across the health system
- Review staff immunization processes, including the identification of priority groups, to identify and address issues and gaps

vi. Infection Prevention and Control

This section includes infection prevention and control practices, guidelines and structures.

What Went Well

- Some DHAs and external stakeholders had infection prevention and control structures and processes, which were used effectively
- Education and resources were provided by DOH and HPP related to infection control and prevention to build awareness and understanding among internal and external stakeholders
- Consistent and relevant information from Infection Prevention and Control Nova Scotia (IPCNS) helped streamline processes for infection prevention and control practitioners working in acute care

Areas for Improvement

- Some lack of capacity (e.g. structures, policies and procedures, human resources) within the health system to support infection prevention and control, resulting in lack of coordination and inconsistencies in practice

System Recommendations

- Review policies and practices for infection prevention and control at the provincial and DHA level, and address identified gaps

vii. Materiels Management

Materiels management includes procurement and distribution of supplies, including the coordination process.

What Went Well

- The central/provincial coordination of procurement and distribution of supplies, and flexibility in the process
- Procurement of supplies in advance of the response and processes to ensure availability of supplies (e.g. off-site warehouse, quality control)

Areas for Improvement

- Lack of clarity of some processes in materiels management (e.g., cost centres, inventory)
- Lack of coordination, and a plan for procurement and distribution of supplies in family physician offices – this new process put a strain on the materiels management system
- Lack of clarity of procurement and distribution of supplies in the Continuing Care and Long Term Care sector

System Recommendations

- Review and continue to develop and implement protocols, guidelines and systems to ensure timely procurement and distribution of supplies and safety of supplies
- Create a central/provincial inventory/database for equipment and medical devices for an all hazards response (e.g. identify item, location, number, reserves)
- Develop a standardized process for supplies/supply management for Primary Assessment Centres and family physician offices
- Ensure appropriate financial systems are established for tracking during an emergency response (e.g. define/identify cost centres)
- Engage Continuing Care and Long Term Care to ensure effective materiels management in these facilities

viii. Public Health

This section includes key public health activities to support the response to the second wave of H1N1 including surveillance, the immunization program and public health measures.

What Went Well

- Vaccine Watch and updates on the vaccine supply
- The sequencing of target groups
- The framework for the distribution of the vaccine
- The mixed model method of vaccine delivery
- Flexibility in the plan to respond to changing needs and demands
- Development of surveillance processes and templates
- Development and distribution of the toolkits helped to build awareness, knowledge and skills among the diverse stakeholders involved
- Develop/identify best practices for distribution of vaccines at local centres

Areas for Improvement

- Because of a decrease in vaccine supply at the federal level, there was a lack of availability of the vaccine initially
- Confusion among stakeholders and the public, and inconsistency in the definitions/criteria for priority groups
- Lack of an electronic system and the need to rely on a paper-based system for surveillance, which caused multiple challenges (e.g., lack of timely information, poor quality data)
- Not using the full capacity of the system to deliver the vaccine and inconsistencies in the delivery processes
- Lack of capacity to maintain vaccine safety and supply (e.g., lack of staff, standards and core competencies for the provincial bio depot

System Recommendations

- Build the capacity of the public health system to respond to a pandemic including:
  - Continue to develop a comprehensive electronic public health information system to support tracking critical information, such as the percentage of the population immunized, adverse events following immunization, etc.
  - Review vaccine/immunization distribution strategies to ensure there are effective delivery methods using mixed approaches and continue collaboration with partners (e.g., HR, unions) to develop processes to recruit and educate potential immunizers
  - Review and refine toolkits and resources developed for the response that were effective in providing information and guidance for the diverse array of stakeholders involved in the response
  - Review vaccine supply and distribution processes and ensure standards, core competencies and adequate resources for the bio depot

ix. Primary Care

Primary Care includes primary and secondary assessment centres, alternate treatment facilities, physician engagement, emergency health services and distribution of antivirals.

What Went Well

- During the H1N1 pandemic, Primary Assessment Centres (PACs) were an important resource to manage patient volumes and alleviate stress on other parts of the health care system such as emergency departments and physician offices

- Processes and protocols were established for the management of antivirals, secondary assessment centres, alternate care sites and emergency health services

- Relationships were built with primary care providers, particularly family physicians, who traditionally had not had formal linkages with the health system

Areas for Improvement

- Variability in capacity across the province in ability to develop and implement PACs, lack of processes to ensure staff could work to full scope of practice, and some lack of consistency in processes and protocols

- Lack of engagement of family physicians and lack of timely communication and dissemination of information to primary care providers

- Lack of a contingency plan related to the distribution of antivirals and management of stockpiles in an emergency response, yet when the decision was made to release the provincial stockpile to DHAs and community pharmacies it was done efficiently and effectively

- Lack of clarity of the role of medical first responders (MFR)

System Recommendations

- Continue to use PACs during a pandemic response and incorporate PAC protocols within all hazards plans; conduct an evaluation to review effective processes and procedures and explore the feasibility of transferring the model to existing/regular practice
- Explore mechanisms to ensure effective engagement of family physicians and other primary care providers including developing an inventory of tools and mechanisms for the dissemination of information
- Clearly define distribution processes for antivirals (e.g. policies for utilization and billing) and management of stockpiles (e.g. defining roles and responsibilities) at the provincial level for an emergency response and develop contingency plans
- Review/develop protocols for Secondary Assessment Centres and alternate care sites and incorporate within all hazards planning
- Define the role of medical first responders in all hazards planning

x. Acute and Tertiary Care

Acute and tertiary care includes development of triage protocols, systems to track bed availability, and capacity to respond to the pandemic.

What Went Well

- Development of the critical care triage protocol, which provided ethical guidance in situations where there are large numbers of critically ill patients in the province
- Processes established to address bed flow utilization helped to reduce surge on emergency departments
- Working with diverse partners (e.g. clergy, local Ethics Committee, community partners) to develop protocols and procedures for the acute care system
- Identification of resource requirements to increase ventilator capacity

Areas for Improvement

- Although the critical care triage protocol was not utilized, further work is required (e.g. building awareness of the protocol, clarifying some elements, developing a process for implementation)
- Bed surge capacity protocols are not complete
- Lack of capacity within the acute care system to respond to an emergency (the acute care system was not tested to the same extent as the public health system)
- Lack of processes and capacity to collect information/measures during an emergency response within current information technology infrastructure

System Recommendations

- Review, test and further develop the critical care triage protocol and incorporate within all hazards planning
- Develop and implement a bed utilization strategy including a bed management system (e.g. bed flow, tracking)
- Strengthen and formalize partnerships established through the pandemic response
- Explore the capacity of the acute care system (including an infrastructure analysis) for emergency preparedness and identify and address gaps
- Develop a home ventilation plan including standards
- Continue to support the development of a linked IM/IT system for the acute care health system to support coordination (e.g. linking ICUs, tracking bed flow)

xi. Continuing Care, Hospice, Palliative and Support Care Services

This section includes activities undertaken by Continuing Care (both at the DOH and DHA level), Department of Community Services and representatives from service provider umbrella associations, long-term care, residential care facilities, home support agencies, VON, adult residential centres and regional rehabilitation centres to support the response to the second wave of H1N1.

What Went Well

- Generally, communication to the Continuing Care sector from the DOH and HPP was comprehensive, and issues and concerns were identified in a timely way

Areas for Improvement

- Lack of understanding within the system (DOH, HPP, DHAs) about the needs and capabilities that exist within the Continuing Care and Community Services sectors
- Lack of clarity and confusion over priorities related to staff immunization, which caused anxiety among some Continuing Care staff
- Lack of clarity related to procurement and distribution of supplies within Continuing Care
- Palliative and hospice care were not effectively included in business continuity planning

System Recommendations

- Build awareness and understanding within the system (e.g. DOH, HPP, DHAs) about the needs and capabilities that exist within the Continuing Care and Community Services sectors
- Provide clear, timely and consistent information about priority groups for staff immunization
- Review, adapt and update all hazards plans of Continuing Care (DOH and DHAs), including ensuring effective materiels management in these facilities
- Include hospice and palliative care in all hazards planning

III. Moving Forward

This report presents lessons learned related to the health system's response to the second wave of the H1N1 response. It is critical that the recommendations within this report are reviewed and acted upon to help improve future planning related to pandemics as well as all emergencies the health system may face.
The findings contained within this report are intended for all stakeholders involved in supporting emergencies that face the health system, including but not limited to pandemics. Our health care system is complex, with a multitude of diverse stakeholders required to support an emergency response. All stakeholders within the system must be diligent in ensuring the lessons learned (from this report and other more comprehensive reviews) are incorporated into future all-hazards planning to help ensure the health system is prepared and able to protect and support Nova Scotians during an emergency. Commitment to emergency preparedness and proactive planning will help to ensure the health and safety of Nova Scotians – the ultimate goal of the health system.

IV. Appendices

i. List of departments, branches and organizations consulted through the focus groups and surveys

Focus Group Sessions:

Group	Date
Rapid Response Team (Situation Room)	01/15/10
CDPC / Surveillance / Informatics	01/21/10
Admin Staff / Data Entry	02/04/10
Briefing Group	02/05/10
Influenza Leadership Team	02/08/10
Expert Group	02/15/10
Immunization Sub-Committee	02/18/10
Support Team: Business Continuity (1 of 2)	02/23/10
Federal/Provincial/Territorial	03/05/10
Support Team: Business Continuity (2 of 2)	03/10/10
Finance	03/12/10
Communications	03/12/10

External Stakeholder Focus Group Sessions:

Group	Date
College of Registered Nurses of Nova Scotia (CRNNS) and College of Licensed Practical Nurses of Nova Scotia (CLPNNS)	03/15/10
HealthLink 811	03/15/10
Health Unions (NSGEU, NSNU, CAW, CUPE, Paramedics)	03/24/10
Pharmacy Association of Nova Scotia	03/26/10
Continuing Care	03/30/10
Vice Presidents Acute / Clinical / Community Health / Continuing Care / Patient Care / Chiefs of Staff at DHAs and IWK	04/09/10
Department of Labour and Workforce Development	04/09/10

Survey Participants:

Group

- District Health Authorities
- IWK Health Centre
- Nova Scotia Department of Health – Branches
  - Primary Health Care
  - Team Developing Critical Care Triage Protocol, Acute and Tertiary Care
  - Labour Relations
  - Communications
  - Emergency Health Services
  - HR – CSU
  - Physician Advisor
  - Mental Health
  - Acute & Tertiary Care – IPCNS
- Pandemic Leads

ii. List participants in the stakeholder forum

Group	# Participants
Governance and Leadership (Command and Control)	23
Information Sharing and Communication	17
Human Resources	14
Occupational Health and Infection Control	16
Materiels Management	11
Public Health	15
Primary Care	14
Acute and Tertiary Care	16
Continuing Care, Hospice, Palliative and Support Care Services	9
TOTAL # Participants:	**135**

iii. Summary of Findings – categorized by Key Themes

• Governance and Leadership (Command and Control)

Governance and Leadership (Command and Control) – includes the organizational and governance structures put in place in preparation for the second wave of H1N1, as well as issues related to accountabilities, roles and responsibilities, decision-making, leadership, etc.

Leadership and Commitment		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• Effective leadership was provided for the pandemic, particularly from the Chief Public Health Officer, the Physician Advisor at DOH, the Deputy Chief Medical Officer of Health and provincial structures such as Pandemic Leads and the Expert Group. It was important to "pull together" CEOs and keep them updated • Health care providers, staff, administrative personnel, senior leaders, etc. were committed, flexible and worked long hours to help support the response, and team work and cooperation helped to ensure an effective response		• Continue to provide leadership for response to an event, such as a pandemic, through appropriate structures • Acknowledge the commitment and hard work of all involved in supporting the response to the second wave of the H1N1 response • Ensure a clear structure is developed for command and control for the system, with clearly defined roles and responsibilities for future emergency situations

Structures		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• Several structures were established for the response to the second wave of the H1N1 pandemic at the provincial and local level (e.g., DHA and IWK level) and generally it was felt that the structures established were effective in planning for the pandemic and supporting the response (e.g., Emergency Operations Centres [EOCs], Pandemic Leads and local Pandemic Action Teams, Expert Groups, etc.) • Early establishment of EOCs and regular meetings throughout the process were important	• For some, there was lack of clarity of the roles and responsibilities of the various structures and the connection among the structures • Some felt there appeared to be a lack of coordination in terms of governance and leadership (command and control) between HPP and DOH • There were some gaps in expertise within some structures • At times, some stakeholders did not feel their expertise was listened to and valued	• Develop an organizational chart depicting the structure of the various groups developed for the response, including the relationships among the groups and membership • Develop and implement processes to ensure all stakeholders feel comfortable participating in discussions and feel their expertise is valued (e.g., build awareness and understanding among key stakeholders about the expertise and potential contributions of various organizations to a pandemic)

Roles and Responsibilities		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• Generally a variety of stakeholders with the right mix of knowledge, skills and expertise were invited to participate on structures (i.e. groups, committees) established for the response • The functions of the various groups were important in the response (e.g., scientific advice, strategic planning and decision-making, operational planning, emergency planning, etc.)	• Some expertise was lacking on the various structures established for the pandemic (e.g., expertise related to occupational health, expertise in human resources, background in family medicine, expertise in pharmacy and EHS) • For some there was a lack of clarity in terms of roles and responsibilities (e.g., between DOH and HPP, between structures established for the response)	• Review gaps in expertise and membership of structures established for the response to identify additional human resources required for pandemic and all hazards planning • Clearly define roles and responsibilities of key stakeholders including DOH, HPP, DHAs and the IWK (develop terms of references which articulate decision-making processes and authority)

Accountability and Decision-Making		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• The key stakeholders and staff involved in the response worked well together to come to consensus on tough decisions in a short timeframe • Both science/epidemiology as well as the reality and context from the DHAs were used in making decisions • Decisions made were generally communicated to front lines in a timely way • Some felt there was consistent decision-making processes from a provincial perspective • Assigning responsibility for actions with clear timelines was important	• At times, there was a lack of clarity in the decision-making process (e.g., who had final authority, confusion over lack of approval processes, etc.) • There was sometimes lack of accountability at the DHAs for operation decisions • Greater policy analysis support is required	• Clarify, document and streamline decision-making processes and continue to use evidence and local context to inform decision-making • Improve policy analysis support to help ensure evidence-based decision-making • Ensure accountability for implementation of recommendations for lessons learned

Planning		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• Pandemic planning provincially and within DHAs was important and contributed to building awareness and understanding • Work done in business continuity planning and incorporating surge capacity was important for the response • The audit tool was an effective program to establish priorities and measure preparedness for the Nova Scotia health system	• Some business continuity planning processes are more difficult to implement in a health care setting (e.g., closing a unit, redeployment of staff between certain lines of business) • Current plans are too long and vague (not useful to staff) • All hazards planning is more effective to address system issues (versus pandemic planning) • Psychosocial planning and support was lacking for health care providers and the community • Greater attention needs to be paid to including the following in all hazards planning: psychosocial support, hospice and palliative care, volunteer recruitment and management, research and ethics, community services, continuing care	• Conduct all hazards planning incorporating business continuity planning using a systems approach and provide practical concise plans for staff • Ensure lessons learned processes and other data/information from evaluations/reviews are incorporated within planning • Clearly define and incorporate psychosocial support in all hazards planning • Develop guidelines for re-prioritization of work and moving from business as usual to emergency response • Ensure business continuity planning and implementation is appropriately resourced and implemented provincially and across DHAs • Review and evaluate emergency planning and management to identify strengths, gaps and solutions to address gaps • Explore conducting mock scenarios in planning for a response • Ensure all hazards planning is reviewed and updated regularly

Collaboration and Networking		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• Collaboration and planning with various partners (internal and external stakeholders) was important in terms of operationalizing plans – this was because relationships were built, buy-in had occurred, MOUs existed, etc. • Working with various partners (internal and external stakeholders) throughout the response contributed to success • A history of working together and strong relationships helped to problem solve and address issues that arose during the response • The engagement of First Nations representatives and communities was positive (a document reflecting the parties involved was prepared outlining roles and responsibilities of DOH, HPP the DHAs and First Nations and Inuit Health – this approach/ document could be expanded to apply to a future health crisis)	• In some cases, partners needed to be engaged earlier in the response (both internal and external stakeholders such as VPs of Medicine, Doctors NS, the Nova Scotia Department of Labour and Workforce Development, the College of Pharmacists, etc.) • At times there appeared to be a lack of understanding of ways of work (e.g., participatory approaches) – e.g., different approaches to operationalizing programs within HPP • For some, there appeared to be a lack of coordination provincially (DOH, HPP) and at the local levels (DHA, IWK), particularly in strategic planning and decision-making	• Continue to build relationships with key stakeholder groups (internal and external) that are important not only for a response to a pandemic but also for all hazards and health system planning • Identify key external stakeholders and ensure that these organizations are involved early in the planning process and are included at appropriate planning tables to help ensure that their skills and capacity are used effectively

Flexibility		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• Although defined structures and processes are critical for pandemic planning and ensuring an effective response to an event, there must be flexibility to respond to unforeseen issues • HPP and DOH recognized that each DHA is unique and attempted to be responsive to local contexts and needs	• While recognition of the unique needs and contexts of DHAs is important during a response, some standardization and consistencies in approaches is required	• Continue to identify and develop structures and processes for pandemic planning • Recognize the need for flexibility in planning for a response and implementing plans; however, guidelines to help ensure consistency and standards are also required (e.g., provincial decisions need to reflect possible consequences)

Research and Ethics		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
	• There was a lack of research and an ethical framework to guide some of the work	• Incorporate research into planning and continue to develop ethical frameworks to help guide planning and ensure these perspectives are included in the Pandemics Leads Committee

• Information Sharing and Communication

Information Sharing includes internal communication and information sharing within the departments of Health and Health Promotion and Protection, district health authorities and the IWK Health Centre, as well as external communication and information sharing with key stakeholders involved in supporting the response, the media and the public.

Internal Communication and Information Sharing – HPP, DOH and DHAs

Processes to Facilitate Information Sharing and Communication		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• Internal processes and mechanisms were established within HPP, DOH, DHAs and the IWK to share information, provide updates, facilitate communication (e.g., CEO conference calls, Emergency Planning conference calls, Telehealth updates posted on websites, shared directories, town halls with senior leadership presence, Flu Watch, Respiratory Watch, etc.) • Communication staff and communication plans within HPP, DOH, DHAs and IWK helped to support information sharing to staff and partners	• At times there was a lack of coordination within HPP and DOH in communication and document management processes, which contributed to duplication, inefficiencies and information overload (e.g., lack of an approval process for receiving and documenting approval of communication products, the source of emails and communication was confusing, lack of a process to manage changes to documents, etc.) • There was sometimes a lack of coordination among DOH and HPP, and the DHAs and the IWK (e.g., sometimes the DHAs or IWK were unaware of messages to the public) – perhaps a centralized mechanism is required at the DHA level or defined communication links are required • In some DHAs and organizations, there is lack of infrastructure to share information (e.g., web architecture, emails, etc.) • The process for responding to ministerial correspondance was complex, slow and ineffective, therefore it was adapted and improved	• Review communication processes within HPP, DOH and DHAs and the IWK during the response and develop a comprehensive communication and document management plan for all hazards planning, incorporating what worked well and strategies to improve coordination and ensure a streamlined approach • Continue to develop processes for and ensure there is clarity re: ministerial responses, responding to emails, etc. • Develop processes to support the development of a crisis website for a response, particularly in relation to using the site to coordinate access to district level information, and to support the province and districts in sharing products in a timely way

Clarity and Consistency		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• Communications staff from DOH, HPP and Communications Nova Scotia met regularly, often on a daily basis, which helped to facilitate coordination between the departments • Regular communication with DHAs and the IWK through teleconferences throughout the event was critical to obtain input and buy-in to key components of the response (critical care triage protocol, toolkits, etc.)	• There was sometimes a lack of consistency in messages from HPP and DOH to the DHAs and the IWK, and messages from the province sometimes conflicted with those from PHAC • There is a lack of standard processes and systems for communication across DHAs, and there was sometimes a lack of consistency of messages across DHAs	• Continue to use communication mechanisms that helped to ensure clear and consistent messages, and develop strategies to improve processes • Develop standard processes and tools for communication across DHAs

Timeliness, Responsiveness and Frequency		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• Regular updates and briefings from HPP and DOH were important to ensure DHAs and the IWK were aware of all issues and activity (e.g., between the Joint Health Emergency Operations Centre and local EOCs, situational reports, etc.)	• There was a significant amount of information disseminated from HPP and the DOH frequently, and there was no process to identify the most recent updates (i.e., there was a lack of clarity about new and changing information)	• Continue to use communication mechanisms that helped to ensure clear and consistent messages and develop strategies to improve processes • Develop standard processes and tools for communication across DHAs

External Communication and Information Sharing – Key Stakeholders

Processes		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• Various mechanisms and processes were developed to communicate with key stakeholders (e.g., meetings with local Chambers of Commerce, collaboration with municipalities to host community town halls, collaboration with regulatory bodies and associations, etc.) • External stakeholders established and/or used existing mechanisms to communicate with their staff/networks	• Some external stakeholders were challenged with communicating to members due to lack of infrastructure (e.g., staff without emails, members do not check websites regularly, etc.) • There are lack of mechanisms to communicate with workplaces/private sector employers	• Continue to establish and/or use structures and processes (external stakeholders) to facilitate communication to members/network • Review strategies for communicating with workplaces/ employers including creating a framework and strategies for mass communication with private sector employers

Clarity and Consistency		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• The identification of a "point person" within HPP and DOH to facilitate communication with external stakeholders was effective • Regular communications with national networks and colleagues (external stakeholders) allowed for sharing of approaches and best practices	• There was a significant amount of information disseminated from HPP and the DOH frequently, and there was no process to identify the most recent updates (i.e., there was a lack of clarity about new and changing information)	• Continue to provide comprehensive information to external stakeholders during an event using a variety of mechanisms (e.g., webinars, toolkits, conference calls, Q and As, etc.); and develop processes to streamline and update information

Comprehensiveness and Responsiveness		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• Generally the information from HPP and DOH was comprehensive and informative (e.g., the H1N1 Bulletin, Respiratory Watch, etc.) • HPP and DOH were generally responsive to inquiries	• At times, communication to various stakeholders was not timely; earlier communication and consultation was required (e.g., Department of Labour, unions, regulatory bodies, etc.) • There has been little communication from HPP and DOH since the second wave ended	• Continue to identify key stakeholders and develop strategies to ensure effective and timely communication with these groups • Ensure follow-up communication after the response, including acknowledging contributions, sharing lessons learned, etc.

External Communication and Information Sharing – The Media

Processes		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• Effective processes were developed to communicate with the media (e.g., media events, teleconferencing allowed media outside metro to have access to key spokespersons, etc.) • Briefings were effective and beneficial in providing explanation and background to increase understanding of technical topics • Having a spokesperson from both DOH and HPP at every media event was important, because it built recognition with the media and experience for spokespersons	• There was lack of consistency and clarity in the approval process for communications/ messages – this was adapted and improved over time	• Review processes for communicating with the media and continue to use effective strategies and make improvements as required • Continue to develop processes to ensure an efficient approval process for communications

External Communication and Information Sharing – The Public

Clarity and Consistency		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• Having the Chief Public Health Officer as the "public face" for communicating with the public helped ensure consistency in messaging, built trust and credibility and helped reduce public anxiety and fear • Healthlink 811 was an important mechanism for communicating with the public and providing information in a timely way; the system worked well given that it was relatively new • Generally, messages to the public were timely	• Having one person as the "public face" has disadvantages when difficult or unpopular messages need to be communicated. It may be worthwhile to pull in other experts to support the decisions that are made – while this was done for certain things, it didn't happen on a regular basis. It's also important to have back-up spokespeople who are trusted and credible if main spokesperson gets sick, etc. • While Healthlink 811 was an effective communication mechanism, there was sometimes a lack of coordination and consistency in the information provided to Healthlink 811 and that Healthlink 811 provided to the public • There was a lack of consistency in messages from various key stakeholders (e.g., PHAC, HPP, DOH, DHAs, family physicians) which was confusing for the public (e.g., priority groups) • Messages changed (e.g., priority groups) which caused confusion among the public, and inconsistencies in processes and procedures among DHAs caused confusion • The communication plan for First Nations as a priority group needs to be better planned to ensure cultural safety • There was lack of use of social media and lack of capacity in this area	• Continue to provide a consistent credible spokesperson and balance this with the benefits of having other experts support difficult or unpopular decisions • Develop a comprehensive communication plan to ensure coordinated communication within the health system and consistency of messages • Ensure the communication plan with respect to an identified priority population is articulated to support cultural safety for that population

Timeliness and Responsiveness		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• Some organizations began communication to the public early prior to the second wave of H1N1 • Communication and education to the public was comprehensive (e.g., measures to prevent the spread, etc.)	• A few felt there was lack of responsiveness to public anxiety and panic, and that there was a need to be more proactive • There is need to explore additional mechanisms for sharing information (e.g., Q and As in the newspaper, etc.) • Messages were sometimes communicated to the public prior to some key stakeholders (all correspondence for practitioners should, where possible, predate a public announcement by 24 to 48 hours)	• Continue to ensure timely, responsive and comprehensive communication to the public • Develop communication strategies to ensure timely dissemination of information to external stakeholders, and ensure communication to the public is not premature

Communication and Information Sharing – Toolkits

Processes		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• The toolkits developed for various audiences including the DHAs, key stakeholder groups – such as schools, day cares, long-term care facilities, physician offices, businesses, etc. – and the public were effective in providing information and building awareness and knowledge (influenza decision chart, etc.)	• The toolkits needed to be developed and distributed sooner • Regular review and update of toolkits is required	• Continue to use toolkits for communicating with DHAs, external stakeholders and the public, ensure timely distribution, and review and update as required

• Human Resources

Human Resources includes issues such as planning for human resource requirements with internal and external stakeholders, capacity to respond to the second wave of H1N1, including redeployment of staff, sick leave policies, etc.

Structures and Processes		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• Existing processes within organizations, redeploying existing human resources (HR), and/or the establishment of temporary mechanisms to facilitate recruiting additional HR was critical for the response to the pandemic (e.g., legislation for providing temporary licences and the responsiveness of the colleges to support this process, support from HR to facilitate temporary practice licences, use of central staffing, timely decision-making for human resource utilization, the Good Neighbour Protocol to support sharing of staff, etc.) • Some DHAs/IWK developed and implemented daily staff attendance monitoring programs, sick leave tracking processes and coverage plans for staff absences, which provided information to monitor response capability • DOH secured funding for physicians which supported staffing of Primary Assessment Centres (PACs)	• There was a lack of structure at the higher level for planning and coordination related to HR issues, and some external stakeholders were not engaged in HR planning at higher level emergency measures planning tables • There appeared to be a disconnect between HPP, DOH and DHAs/IWK in terms of human resource planning for the second wave of H1N1; there appeared to be a lack of direction provided to DHAs and institutions in terms of HR planning, which resulted in inconsistencies • In DOH, HPP, some DHAs and the IWK, HR was not as actively engaged as they could have been (both in planning and during the response) • When HR was engaged, it was not always timely • Some HR processes at DHAs/IWK were a challenge to ensuring staff were hired and able to work in a timely way (e.g., lengthy criminal record checks, lengthy orientation processes, etc.) *continued on next page*	• Create a standing Emergency Coordinating Committee (or similar structure), to begin planning now for an emergency such as a pandemic so that effective processes and structures can be established to address HR issues (ensure all key stakeholders are involved including Unions, the Colleges, DOH, HPP, etc.) • Engage HR staff more effectively in developing and delivering a response, particularly in planning (e.g., business continuity planning and all hazards planning) and engage in a timely way • Develop processes and policies for remuneration of health care providers during emergency events (for when providers may be called in to provide additional support) • Continue to develop systems to support daily attendance monitoring in emergency situations • Streamline hiring processes to enable timely response to address staff shortages • Work with unions and private sector employers to address sick leave and staffing policies that are barriers during a response (e.g., requiring a note from a physician)

Structures and Processes cont'd		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
	• There was confusion about the use of sick leave in some organizations and the accommodation of H1N1 cases, (e.g., requirement for doctor's certificates/notes caused backlogs in EDs, requirement to remain home for seven days) • There was a lack of process and policy for remuneration of some providers (e.g., physicians, pharmacists for compounding solutions), and although there was resolution, decisions were not timely which put providers and administrators in awkward positions • Government departments made and circulated their own human resource policies. There was a lack of clarity in some cases, such as policies on absenteeism • Policies need to be addressed, such as the impacts on the pensions of retired persons who return to work to help in emergencies	

Capacity and Education		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• The redeployment of staff and/or hiring of additional temporary resources was critical to ensure sufficient capacity to respond to the pandemic • DHA emergency planners, in those districts that have this resource, were important supports during the event • Some external stakeholders recruited and/or trained additional staff in a short period of time (e.g., Healthlink 811, education for online licensing through the colleges, etc.) • Webinars were an effective mechanism for sharing information and building awareness and understanding among key stakeholders (e.g., DHA and IWK staff, external stakeholders, staff of DOH and HPP, etc.)	• Limited human resource capacity within the health system challenged the response to the pandemic • Training is lacking among some DHAs and key stakeholders related to emergency and disaster management • Some of the additional resources were required earlier in the process • Cross training is required as a proactive measure for business continuity planning (many DHAs have small specialized departments and, if staff become ill, this has the potential to close an entire department) • Some external stakeholders felt the training given to the providers recruited to help in the event was inadequate • There was a lack of volunteer response – a database of retired employees and their skills sets would be useful • DOH needs a provincial inventory of specialized staff and how they can be utilized • There was a lack of planning for volunteer recruitment and support (e.g., screen volunteers prior to an event)	• Review the elements of a provincial health emergency response (including HR, physical infrastructure requirements and business processes) to support an effective response • Explore the capacity of DHAs and the IWK for emergency preparedness expertise, and identify and address gaps (e.g., training in operating an Emergency Operation Centre, education about a systems approach, etc.) • Continue to redeploy staff resources to support events such as a pandemic, and ensure timely redeployment • Identify training needs related to responding to a pandemic and other emergency events, and provide education as required to ensure providers are able to work to their full scope; provide cross training; and ensure that appropriate, available resources are accessed, including planning for backfilling functions where staff are redeployed *continued on next page*

Capacity and Education cont'd		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
		• Ensure an inventory/asset map of staff competencies (across the system and include staff who are retired) is completed prior to an event (as part of business continuity planning) to match skills sets with required tasks and to facilitate moving staff through the system to accommodate staff shortages • Review the training provided to temporary providers to ensure it is effective in building the required knowledge and skills • Continue to use webinars for building awareness and knowledge among varied providers and stakeholders

Staff Support and Recognition		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• Some DHAs provided support to staff during the event which was important (e.g., a mental health self care plan was activated to ensure staff were supported and had access to self care information, relaxation space, etc.) • Some DHAs have held recognition events to recognize staff contributions during the event	• There was a lack of support/emotional support in some organizations for staff working long hours, dealing with difficult situations, stress, etc. • Care for care givers was important and needed more focus during the event and even if some strategies were implemented, these were not timely; this should include training for violence in the workplace • There is a need to ensure that providers and staff are recognized for the contributions during the response (e.g., long hours, flexibility, etc.)	• Engage HR staff more effectively to support staff during an event (e.g., debriefing, support for stress and burnout, etc.) • Ensure that staff are recognized for their efforts during the response

Flexibility		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• Health care providers were flexible in responding to the event and responsive in providing additional support (e.g., retired health care providers providing additional support, providers assuming new and/or expanded roles, pharmacists responding quickly to distribute antivirals, etc.) • External stakeholders were flexible in adapting processes to ensure effective use of human resources (e.g., created new position statements to facilitate care, etc.)	• Some felt there was a lack of flexibility by some external organizations and the health system to facilitate deployment of all available resources for the event (e.g., students were not engaged effectively, union contracts were felt to be a barrier by some, etc.)	• Explore strategies (e.g., legislation) to ensure effective deployment of human resources, and if existing human resources cannot be redeployed, clearly communicate the rationale • Incorporate core competencies within all hazards planning to assist in the re-assignment of health care workers in time of emergency

• Occupational Health and Infection Control

Occupational Health and Infection Control includes occupational health and infection control practices, guidelines and structures, personal protective equipment, fit testing, etc.

Structures and Support		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
Common • Some organizations provided education to staff on occupational health and infection control policies and procedures	**Common** • Too many different government departments asked for the same information from different individuals in the DHAs, which resulted in inefficiency and conflicting information • There is a lack of understanding about the difference between occupational health and infection control	**Common** • Continue to provide education on infection control and occupational health issues, and continue to connect at the local level • Explore occupational health resources including a dedicated position at provincial and DHA levels
Occupational Health • Some DHAs and organizations had effective occupational health structures and processes (e.g., local committees, information posted and kept current on websites, etc.) • When the Occupational Health Nurses (OHN) teleconferences started, the OHN group felt more connected/included provincially	**Occupational Health** • Some DHAs lack committees/structures for Occupational Health and Safety • There is lack of coordination for occupational health provincially (e.g., lack of mechanisms to facilitate linkages and communication with and among DHAs and with local institutions) • At times, there was a lack of direction leading to inconsistencies in occupational health practices • Most OHNs were given some extra resources during the pandemic, but these were not always timely; in addition, support is required post pandemic for OHNs to "catch up" due to inadequate baseline resources • There are a lack of occupational health physicians	**Occupational Health** • Review and/or develop structures for occupational health in all districts to ensure sufficient capacity, and establish communication processes • Review and/or develop a structure/mechanism at a provincial level to facilitate effective coordination and support for occupational health • Ensure consistent, clear and timely messages are provided to occupational health committees

Structures and Support cont'd		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
Infection Control • Education was provided to some key stakeholders from infection control at DOH which was informative and helped to build understanding within the DOH and HPP about local context • The toolkit from DOH and HPP provided comprehensive information on infection control procedures	**Infection Control** • Surveillance requirements/ protocols were confusing and too labour intensive; and there was lack of consistency in requirements • The changing of priority vaccine groups created confusion and the guidelines for health care workers were not timely	

Policies and Practices		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
Common • There was work within the DOH (e.g., Primary Health Care, Emergency Health Services) to support occupational health and infection control (e.g., working with primary health care providers to provide advice and funding for supplies, adapting guidelines from the Public Health Agency of Canada [PHAC] to meet the pre-hospital environment, enhanced standards for the management and storage of personal protective equipment [PPE], EHS identifying situations of potential influenza like illness [ILI] early so that paramedics were prepared with PPE, etc.)	**Common** • There is a lack of consistency and standardization across health care facilities for occupational health	**Common** • Review policies and practices for occupational health and infection control at the provincial and local level, and develop processes to address gaps • Support the development of more effective infection prevention and control policies and procedures in family physician offices
Infection Control • Some organizations (e.g., DHAs, community service agencies, Emergency Health Services [EHS], etc.) implemented effective infection control practices that helped to prevent the spread of the disease	**Occupational Health** • There is a lack of policies and practices within some organizations for occupational health and infection prevention and control policies and procedures (e.g., Primary Health Care settings, family physicians etc.) • Issues related to violence in the workplace during an emergency event were not adequately addressed	

Personal Protective Equipment (PPE) – N95 Masks and Fit Testing		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
Occupational Health • Some organizations further developed fit testing regimes and developed processes for regular fit testing (e.g., rotating schedules for all staff, incorporation within orientations, etc.) • Some organizations provided education for staff about the issues related to N95 masks and fit testing, and this helped to address concerns • Some organizations had policies or guidelines on personal protective equipment which facilitated the fit testing process and understanding of requirements	**Occupational Health** • Generally, fit testing was not done in a timely manner – it was implemented too late • There were inconsistencies in messages and positions from key stakeholders (e.g., DOH, Department of Labour and Workforce Development, Unions) about when the N95 mask was required which caused confusion and anxiety; and it appears that the issue has not been resolved • Generally, there were concerns about the availability of N95 masks and insufficient supplies • Interpretation of PHAC guidelines varies (across and within provinces)	**Occupational Health** • Continue and/or explore implementing fit testing for N95 masks in ongoing processes within organizations, including addressing the needs of students (e.g., CPR training, orientations, rotating schedules) so that fit testing does not have to be done during an emergency such as a pandemic and to ensure that it is done on a regular basis • Develop a process/policy in collaboration with key stakeholders (e.g., unions, workplaces, etc.) to clarify the requirements related to N95 masks, and clearly communicate the outcome • The Public Health Agency of Canada needs to include Occupational Health & Safety regulators when issuing orders • Obtain stocks of N95 masks prior to the event

Staff Immunization		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
Occupational Health • Occupational Health & Safety played a leadership role to ensure staff received the vaccine • DHAs established effective processes to facilitate efficient immunization of staff as illustrated by uptake by staff • Innovative recommendations were made to facilitate immunizing family members of staff who met the target group criteria to decrease lines in public clinics (e.g., use long-term care staff to vaccinate family members of staff)	**Occupational Health** • There were issues related to mandatory vaccination of staff – this should not be discussed during an event • There was confusion related to vaccinating front-line workers – guidelines are needed but flexibility is also required	**Occupational Health** • Continue to use effective processes to facilitate staff immunization, and review and clarify policy on outstanding issues (e.g., mandatory vaccination)

• Materiels Management

Materiels Management includes procurement and distribution of supplies, including the coordination process.

Procurement and Distribution		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• The provincial procurement and distribution of supplies (e.g., infection control, mass immunization supplies, etc.) through CDHA was effective • The centralized coordination across program areas within DOH and HPP by Health Services Emergency Management (HSEM) provided a single point of contact for DHAs and the IWK • There was flexibility in the distribution process to ensure those with more urgent needs received supplies first • The post event process for cost recovery is clear • Funding enabled districts to assemble the necessary equipment to do a large volume of lab testing and assess processes in a timely manner	• At times, supplies were not received in a timely way • In some cases, there appeared to be a lack of capacity for the distribution of supplies (e.g., distribution of supplies to Continuing Care facilities was done from one location by one person) • The purchasing and distribution of supplies was challenged for Continuing Care by the integration of Continuing Care to the DHAs • Supply coordination and provision was a challenge in terms of physicians' offices (and some community hospitals) – there were items that should be available and used but are not regularly stocked in physician offices and this put a strain on materiels management supporting physician's offices (a new process) • There was some feedback from long-term care facilities that the cost of supplies is a concern • There was a lack of clarity related to materiels management with Continuing Care and DOH (e.g., roles and responsibilities) • There is a need to engage long-term care more effectively to understand context (e.g., supplies needed) • There is a lack of clarity in equipment/supplies needed for PACs • Security of supplies is lacking	• Review and continue to develop and implement protocols, guidelines and systems to ensure timely procurement and distribution of supplies – in most cases, central coordination at the provincial level was valued to ensure access and appropriate and timely service • Provide direction, including policy about how to manage supplies in a pandemic • Develop a standardized approach for materiels management for physician offices (e.g., distribution process, funding, etc.) • Further engage Continuing Care and Long Term Care in the materiels management process (e.g., distribution process) • Develop a financial tracking system to support materiels management (e.g., identify/define cost centres at the outset, establish inventory in SAP, etc.)

Supply – Availability and Access		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• Procurement of supplies in advance (e.g., immunization, infection control, 90 ventilators, etc.) helped to ensure that the health system was capable of responding to H1N1 • Access to new ventilators and accompanying supplies helped to address potential extra-ordinary patient care needs and the challenges of the disease (provincially it allowed greater flexibility in patient management at the district level) • Availability of antiviral medication through Primary Assessment Centres (PACs) was important • Some DHAs developed processes to ensure availability of supplies (e.g., securing an off-site warehouse, quality control, etc.)	• The lack of a robust strategic reserve resulted in extra work at a critical time during the response (storing in advance needs to be done) • There was concern about the supply and stockpile of N95 masks • The provincial pandemic supply needs to be updated to reflect the needs of DHAs re: critical care medications • A real-time database of the availability of supplies from the provincial stockpile would be beneficial • Ensure the provincial stockpile of supplies is provincially available year round and equitably distributed	• Develop a consistent approach based on best practices to supply chain management and strategic reserves within the health care system to ensure an efficient and effective system • Create a central database/ inventory for a repository for critical, all hazards equipment and devices (identify the equipment and regularly update) • Create a provincial stockpile of key items

• Public Health

Public Health includes key public health activities to support the response to the second wave of H1N1 including surveillance, the immunization program, and public health measures.

Vaccine/Immunization – Inventory and Supply		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• Although there were challenges, the Biological Inventory Management System (BIMS) is important and some processes established were helpful (e.g., having supplies at the depot prior to the event, having a coordinator, repackaging of vaccine quickly, flexibility of staff at the depot, etc.) • Vaccine Watch was effective as it provided daily information on the vaccine inventory; the updates on the vaccine supply were timely to the DHAs, staff and clinics • Although the lack of the vaccine was a challenge, the limited supply forced sequencing of target groups, which was ultimately positive as there was a lack of capacity to deliver the vaccine to everyone	• The original projections on vaccine supply and demand were incorrect, which caused significant challenges (e.g., inconsistent messages, confused public, etc.) • Although the bio depot has greater capacity than two years ago, gaps remain (e.g., understaffed, lack of staff with expertise) and there appears to be a lack of value placed on the importance of a bio depot for maintaining vaccine safety and supply, and a lack of appreciation for best practices in immunization • The BIMS is not an effective system for tracking vaccine supply • The inconsistencies in existing systems between the DHAs and the province caused challenges for tracking the vaccine supply; and there are challenges related to linking and syncing the systems • There is a lack of capacity for inventory management	• Review the current system for vaccine supply and distribution, and explore how this can be improved, including a supply distribution structure • Review the bio depot and explore how to appropriately resource, including developing standards and core competencies

Vaccine/Immunization – Model of Delivery to the Public		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• The framework for the distribution of the vaccine was helpful, particularly when the supply was inadequate • The mixed method model of delivery was effective and should be used in the future • Ultimately, the delivery model was linked with the availability of the vaccine and sequencing of the risk groups which was important • The mass immunization plan was flexible to respond to changing needs and demands, and varied processes were used to ensure effective clinics (e.g. ticket system, registration system, large enough space for people to sit, quick response to immunize pregnant women, etc.) • The immunization strategy worked in that the public came to clinics and received vaccination, which helped prevent the spread of H1N1	• There was confusion and inconsistency in the definition of priority groups that was compounded by changing guidelines • Using Public Health as the primary delivery mechanism caused back-ups, other mechanisms for delivery should be explored • Although flexibility in the delivery process is required (to reflect the unique needs of each DHA), consistency is also important (e.g., ensure consistent start dates of clinics, organized scheduling, multiple locations, queuing techniques based on hourly capacity, etc.) • Ensure access to immunizations for marginalized groups • Volunteer recruitment needs to happen earlier and ensure volunteers are recognized • Ensure informed consent	• Review capacity to deliver the vaccine during an event and develop a consistent approach to immunization delivery across the province • Utilize lessons learned from the operation of immunization clinics, including exploring different approaches between clinics to determine effective implementation strategies • Explore other mechanisms for vaccine delivery to maximize the number of individuals immunized, and continue discussions with HR and unions to establish processes to support recruitment (e.g., alternate methods of remuneration, streamlining hiring processes, temporary licenses, etc.) • Identify core competencies and accountabilities for immunizers and build relationships and provide continuing education for potential immunizers (including maintaining the cold chain, education about adverse events, etc.)

Vaccine/Immunization – Model of Delivery to Staff		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
	• The definition of "front-line" health care worker was not clear and therefore there were inconsistencies in practices across DHAs and the IWK based on the interpretation of the guidelines • Some staff who were not identified as a priority felt that they should have been, leading to some feeling undervalued and anxious	• Review the definition of "front-line" workers to ensure clarity and consistency in application across DHAs and institutions

Vaccine/Immunization – Adverse Events Following Immunization (AEFI)		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• Relationships were developed with allergists which will be important for future work	• There is a lack of an electronic register to capture information about adverse events following immunization • The AEFI form from PHAC was not received in a timely way; the definitions continually changed; and there were inconsistencies in applying the definitions • There is a lack of access to allergists in rural areas • There is lack of awareness of AEFIs	• Continue to build a more effective surveillance system for AEFI, including clarifying definitions, and providing education about the AEFI definitions and instructions on completing the forms, etc. • Continue to foster relationships with allergists

Surveillance – Infrastructure		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• Additional support (e.g., from other departments within HPP and other government departments and other departments within DHAs) were engaged to help with surveillance, which were important additional resources • There are processes and templates that have been built that can be used in the future	• The lack of a comprehensive electronic public health information system (e.g., lack of formalized information tools, paper based, lack of a electronic registry, etc.) challenged the ability of Public Health to effectively gather, manage and report on data • As a result of the lack of infrastructure, there is lack of timely information to inform decision-making; and there are still outstanding issues related to surveillance (e.g., lack of denominators and numerators) • There was a lack of coordination in surveillance processes (e.g., ED, Infection Control, District Emergency Operation Centre, Public Health reporting separately) • There is a lack of sentinel physicians; this role needs to be more attractive • The system should consider the need for the healthcare worker's signature on the health record, which can interfere with the efficiency of the process	• Continue to explore and build a comprehensive electronic public health information system to support communicable disease prevention and control (CDPC) including data collection, management, analysis and reporting and linking systems • Continue to build knowledge and skills to support surveillance on an ongoing basis as well as during an outbreak • Explore strategies to recruit and support sentinel physicians

Surveillance – Reciprocal Notification and Data Entry		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• Adaptations made to the spreadsheet part way through the event were effective and significantly streamlined the process, which made for more efficient data entry • The process for receipt of batches of reciprocal notification forms and the cycle of returning them was efficient • Implementing support for data entry from HPP was important	• There was inconsistency in completion of the reciprocal notification forms; information was often missing; many forms were completed incorrectly; and hand writing was illegible • There were changing requirements related to the completion of the forms, which was confusing, and there was a lack of understanding among some stakeholders collecting information about the importance of the data and how it would be used (e.g., family physicians) • The reciprocal notification forms are not user friendly for Public Health staff and family physicians • Reporting of information back to DHAs was not always done in a timely way • The support and skills required for data entry, tracking of reciprocal notification forms, informatics, etc. was underestimated • There is a need to weigh the pros and cons of data entry at the local sites versus HPP; the ideal would be data entry at the local sites but there was a lack of capacity to support this process (the local sites could not keep up due to demand related to immunizations)	• Review the reciprocal notification form and adapt as required to remove duplication and ensure only essential information is collected (although the ideal is a comprehensive electronic system versus paper based) • Explore the development and implementation of processes to ensure greater accountability for the completion of data collection forms (e.g., connecting data entry to fee-for-service remuneration for physicians) • Communicate with the front-line staff completing the forms to ensure clarity on the purpose of the information collected (and importance) and how data will be used and build an appreciation for the need to collect the information • Review data entry processes and continue to refine, including exploring the best options for who should enter data during a response (e.g., centrally or locally), and ensure adequate capacity

Tools and Toolkits		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• The toolkits developed for various sectors and audiences were a great resource to build awareness, understanding and knowledge (e.g., influenza decision chart, Respiratory Watch, H1N1 Bulletins, toolkits for immunization clinics, etc.)	• Ensure timely distribution of toolkits	• Continue to review tools and resources developed to assess applicability for "normal" operations and requirements for an event (e.g., transfer the resources and learnings), and make required changes • Highlight changes to the toolkit

Document Management		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• Development of a document management process began during the event but needs to be completed • The manual that has been developed with training and instructions for a document development and management system has applicability beyond the event response • For some, the establishment of a centralized network for document distribution (by Health Services Emergency Management [HSEM] through the Joint Health Emergency Operations Centre [JHEOC]) provided a single, uniform approach to ensure documents were delivered in a timely and consistent manner	• There remains a lack of clarity and coordination of the document management process between HPP and the JHEOC, including a lack of clarity on ownership • A system is lacking to track various versions of documents • Updating documents and formatting documents into templates is time consuming and requires training • There is a lack of a system to evaluate the documents and resources produced during the event	• Continue to develop a document management process for "normal" operations as well as during an event; this process needs to be formalized and implemented into practice • Develop strategies (with key stakeholders) to ensure document distribution processes for both DOH and HPP are agreed upon and adhered to in advance of an event • Explore developing and implementing evaluation strategies to determine the effectiveness of the documents and resources produced

• Primary Care

Primary Care includes the primary and secondary assessment centres, alternate treatment facilities, physician engagement, emergency health services, distribution of antivirals, etc.

Primary Assessment Centres (PACs)		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• Primary Assessment Centres (PACs) were an important resource to manage patient volumes and help alleviate the stress on emergency departments, physician offices, outpatient departments, etc.; DHAs developed processes to facilitate their functioning/ effectiveness (e.g., joint operation of PACs by CDHA and the IWK; contributions of all providers including family practice physicians; location close to EDs; supply and stationery carts; PAC forms and tools – patient flow matrix; identifying a site coordinator and clinical lead, "nurse first" primary triage, mock set-up, etc.) • The working group with representation from across DHAs established the model of care, including criteria and tools, which facilitated buy-in and implementation	• At times there was inconsistency in messages from PACs to the public • The capacity within DHAs varied related to their ability to effectively run PACs • The lack of ability for RNs and NPs to discharge from PACs was an issue that was resolved, however more timely resolution was needed • Although most of the tools for PACs were useful, it was noted that the pediatric assessment tool could be strengthened • More planning is required in terms of backfilling staff and ensuring providers are comfortable and able to work to full scope of practice • The criteria for PACs site locations was confusing and finding locations was an issue for some DHAs	• Continue to support PACs during a response and explore PACs as a model to assist EDs (in general) • Review processes and procedures that worked well in the implementation of PACs to continue to build on strengths and lessons learned • Incorporate PAC protocols within an all hazards plan

Physician Engagement		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• Although the engagement of family physicians was an issue, gains were made in establishing lines of communication • Working with District Departments of Family Practice/ Medicine and the VPs of Medicine in DHAs appeared to be an effective strategy for engaging family physicians; and when physicians were engaged early in the process they appeared to be more supportive of decisions	• There was a lack of engagement of some family physicians and some were not engaged early enough • Working with Doctors Nova Scotia to communicate with family physicians did not appear to be effective at times; it appeared to be more effective to work with local DHA structures (e.g., VPs of Medicine, District Departments of Family Medicine) • There was a lack of engagement of other providers such as nurse practitioners and family practice nurses	• Continue to explore mechanisms (such as District Departments of Family Medicine, etc.) to effectively communicate with and engage physicians. These relationships need to be built to foster collaboration on an ongoing basis (for many health issues) • Develop an inventory of mechanisms/tools for information dissemination to family physicians and other providers • Assign one contact person at DOH to communicate/liaise with family physicians

Antivirals		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• Key stakeholders came together relatively quickly to plan and establish the distribution process for antivirals • The decision to prescribe to all at risk groups and dispense from PACs created efficiencies and helped to reduce public anxiety • Once established, the distribution of antivirals to DHAs and community pharmacies was timely and effective	• There was a lack of a contingency plan for the distribution of antivirals and therefore when the original plan changed, processes had to be established quickly; there was a lack of a plan for some elements (e.g., compensation for compounding solutions, billing procedures, how to use pharmacies for data collection, etc.) • There was some lack of consistency in the distribution of antivirals through PACs • The fact that the criteria for antivirals changed, and some population groups were more severely affected than expected resulted in stock running out • The policy and practice of use of antivirals was not clear initially, however, once the guidelines were developed they were useful • There is a lack of clarity between DOH and HPP regarding the antiviral drug program	• Review the process for distribution of antivirals – begin planning early, include contingency plans, ensure consistency in distribution procedures, ensure all key stakeholders are involved and support coordination and collaboration (e.g. Pharmacy Association of Nova Scotia [PANS], Pharmaceutical Services at DOH, HPP, etc.) • Establish clear policies for the use of anti-virals, including who will receive them, when and how much will be available, billing etc. • Establish responsibility for the management of the antiviral stockpile, including authority to release reserves

Secondary Assessment Centres		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• Although DHAs were able to manage without full deployment of these centres, using a working group with representatives from across DHAs resulted in criteria and tools that would facilitate implementation	• There was a lack of understanding regarding the ability of secondary assessment centres to receive non-ambulatory patients from EHS	• Incorporate secondary assessment protocols within an all hazards plan • Review/develop provincial protocols regarding secondary assessment centres and their ability to receive non-ambulatory patients from EHS

Alternate Care Sites		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• Stakeholders from across the health system came together relatively quickly to create criteria and expectations for alternate care sites	• Development of the model for alternate care sites occurred late in the process and there was a lack of ownership • Criteria for staff and a template and policies are required	• Assign responsibility for alternate care sites • Incorporate alternate care site protocols within an all hazards plan

Emergency Health Services (EHS)		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• Processes were established within EHS to facilitate effective response to the event and protect staff (e.g., identification of influenza like illness [ILI] cases at the medical communication interface – first watch triggers and modification of dispatch protocols; advanced notification of potential ILI to responding paramedics and medical first responders [MFR])	• There was a lack of understanding of how EHS inter-facility services will be provided to DHAs during a pandemic (e.g., transport of dialysis patients, etc.) • EHS response to immunization clinics needs to be reviewed (e.g., level of certification of paramedics and ability to respond) • More clarity is needed re: medical first responders (MFR)	• Review EHS processes established for the event to build on strengths and lessons learned • Review processes for inter-facility transfers during a pandemic, including prioritization policies if reduced capacity occurs • Develop a province-wide bed management system • Define the role of MFR in all hazards planning

Provincial Electronic Medical Record (EMR)		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• The provincial EMR leveraged current technology to interface with HPP surveillance with respect to reciprocal notification forms, which reduced the manual effort to capture this information	• Not all primary care providers are using the provincial EMR	• Continue to support the implementation of EMRs which is building capacity within the system for data capture and reporting – and such capacity is critical during a pandemic

Laboratory Reports		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• The reporting of positive lab results was timely (although for negative results this was not the case)	• Some areas of the province indicated that lab reports were not timely and that the protocol for swabbing requires review	• Review the protocol for swabbing and processes for lab reporting

• Acute and Tertiary Care

Acute and Tertiary Care includes development of triage protocols, systems to track bed availability, capacity to respond to the pandemic, etc.

Critical Care Triage Protocol		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• The development of the critical care triage protocol provided ethical guidance and was a success	• In some cases, front-line staff are not aware and/or educated about the critical care triage protocol	• Continue to review, test and develop the critical care triage protocol and incorporate within all hazards planning
• The process used to develop the critical care triage protocol was done in collaboration with DHAs, the IWK and other key stakeholders utilizing a best available evidence approach and the expertise of other branches and departments to determine the extent to which support could be realized (e.g., IT, EHS, etc.) and by identifying a lead and ensuring linkages to broader planning	• Some elements of the critical care triage protocol are still not clear and require further development (appeal process, role of ethics, etc.) • Now that the protocol is developed, a process to educate and train health care professionals, and exercise the protocol needs to be implemented	• Implement an education, training and exercise process for the critical care triage protocol

Bed Flow and Utilization		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• The Intensive Care Unit (ICU) bed tracking program assisted in overall decision-making • Processes established to address bed flow utilization helped to reduce the impact of the surge on emergency departments (EDs) – e.g., moving Alternate Level of Care (ALC) patients out of acute care beds, opening new inpatient beds, redeploying staff, adjusting scheduled surgeries – these all contributed to meet surge demands	• Bed surge capacity protocols are not complete, and there is a need for a provincial bed tracking strategy • Although home plans were developed, some family members felt that there could have been better messaging	• Develop a central bed management system and incorporate information technology supports • Continue to review and develop bed surge capacity strategies to identify what worked and what can be used in future events • Use lessons learned related to bed flow and utilization to further develop and support a bed availability tracking system for the province and incorporate within "normal" operations and planning • The bed surge capacity protocol should include home plans including messaging for family members

Collaboration with Community Partners and Others		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• The involvement of District Ethics Committees in key issues such as the critical care triage protocol was important • Including community partners such as clergy in supporting the operationalization of the critical care triage protocol was effective • Working closely with community partners facilitating the discharge of patients (e.g., ALC patients discharged to long-term care facilities, VON accepting extra patients, etc.) was effective		• Use lessons learned in working with community partners to inform all hazards planning as well as health system planning overall • Strengthen and formalize partnerships established through the pandemic response (e.g., clergy, VON, etc.)

Capacity and Planning		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• The needs assessment for system requirements for ventilators appropriately identified the resource requirement for increasing the ventilator capacity within the health system	• The capacity of the acute care system was not tested to the same extent as the public health system; therefore, there is uncertainty about how well it can respond to an event such as a pandemic where more people are seriously ill • There is a lack of processes and policy concerning deaths in homes and how to address mass casualties/fatalities • There is a lack of systems and standards on how to cohort patients • Work related to challenging behaviours may need to be enhanced	• Explore the capacity of the health system for emergency preparedness and identify and address gaps • Conduct an infrastructure analysis to assess capacity and develop strategies to address gaps (e.g., management of negative air pressure needs) • Explore development of policy/processes for fatality management and mass casualties/fatalities (both in and outside of the health care setting) • Incorporate home care and VON within all hazards planning to support effective redeployment of staff to support surge capacity • Develop a home ventilator plan including standards

Leadership and Coordination		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• Leadership and coordination was provided through Acute and Tertiary Care in the DOH for some aspects of the response (e.g., the critical care triage protocol)	• There was a lack of involvement of Acute and Tertiary Care in the DOH in some aspects of the planning and response	• Identify a lead within Acute and Tertiary Care in the DOH who is available over time to provide consistent leadership and communication within the branch during an event such as a pandemic • Ensure Acute and Tertiary Care participates in the development of an all hazards plan

Data Collection and Reporting		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• The situation and ICU reports were useful to track the progression and status of H1N1 and informed planning	• There was a lack of clarity in some DHAs about data needs and reporting requirements related to the situation and ICU reports, and the timelines for completion were a challenge • Processes need to be identified to collect health information (metrics) prior to emergency situations and these need to be built into existing information technology infrastructure (e.g., Meditech) • There is a lack of capacity and consistency in information management and information technology (e.g., various systems for tracking bed capacity, lack of systems to track H1N1, lack of ED data, PACs are paper based, etc.)	• Develop an automated system to measure key metrics related to emergency departments (EDs) and intensive care units (ICUs) • Develop a coordinated/linked information management and information technology system for the health care system (e.g., bed triage, utilization and flow, EDs, ICUs, etc.)

• Continuing Care, Hospice, Palliative and Support Care Services

Continuing Care, Hospice, Palliative and Support Care Services includes activities undertaken by Continuing Care (both at the DOH and DHA level), Department of Community Services and representatives from service provider umbrella associations, long-term care, residential care facilities, home support agencies, VON, adult residential centres and regional rehabilitation centres to support the response to the second wave of H1N1.

Communication and Information Sharing		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• Generally, there was comprehensive and frequent communication to the Continuing Care sector • The toolkit was very helpful for facilities and provided guidance on a number of issues	• At times, the information provided from the DOH and HPP to Continuing Care, Department of Community Services and local facilities (as with many stakeholders) was overwhelming and did not appear to be well coordinated; as a result, it was repetitive and "excessive"	• Continue (HPP, DOH, DHAs) to develop and implement processes for communicating with various stakeholders, with emphasis on streamlining communication, ensuring no duplication, timely dissemination, consistency in messaging/information, etc. • Continue to use resources such as the toolkit that was developed to communicate with and educate key stakeholders

Understanding of Context		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• Once concerns were identified (e.g., immunization in small option homes), these were addressed quickly; DOH and HPP were responsive to concerns	• There was a lack of understanding within HPP and DOH about the context of some Community Service facilities (e.g., there are clients with cognitive issues, fragile patients, risks to staff, etc.); therefore, some language that was used (quarantine) and decisions that were made (e.g., priorities for immunization) caused confusion and misunderstanding	• Build awareness and understanding within HPP, DOH and DHAs about the variety of facilities within Continuing Care and Community Services and their context (e.g., types of clients, supports provided by staff, etc.)

Issues Related to Immunization		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• Once concerns were identified (e.g., immunization in small option homes), these were addressed quickly; DOH and HPP were responsive to concerns • Some facilities held meetings with clients and their families to communicate issues related to priority groups – this helped alleviate fears and anxiety	• There was confusion over the priority groups for immunization • Anxiety was created among some facilities not included in the priority groups for vaccination (both clients and staff – it was noted that this illustrates the lack of understanding within HPP and DOH of the clients of the facilities and the supports provided by staff)	• Continue to provide information about decisions to immunize priority groups and ensure the messaging is timely and consistent • Recognize there may be sensitivities in the identification of priority groups for immunization and continue to respond to and address concerns

Materiels Management		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
• Generally DOH and Department of Community Services (DCS) collaborated effectively in terms of supply issues (e.g., distribution, etc.) • Some felt that the support provided by Health Services Emergency Management and Infection Control in identifying, procuring and distributing infection control supplies for the Continuing Care sector and the DCS provided an appropriate level of protection for these sectors • Although there was a delay, supplies were eventually received and there was flexibility to ensure those with more urgent needs received supplies first	• Supplies were not received in a timely way • There was a lack of capacity for distribution of supplies (this was done from one location by one person) • The purchasing and distribution of supplies was challenged by integration of Continuing Care to the DHAs • Significant effort was required to identify infection control supply requirements for DOH and DCS facilities • Some facilities need direction and clarification about what to do with current supplies – how much should be kept for contingency planning, etc. • For some long-term care facilities, the cost of supplies was identified as a concern	• Develop and maintain a database of facilities, including locations, number of staff, number of residents, etc. • Develop and implement processes, policies and systems to ensure timely distribution of supplies in continuing and long-term care (distribution at a local level would likely be more effective) • Provide direction, including policy, to facilities about how to manage supplies in pandemic planning

Planning		
What Worked	**What Needs Improvement**	**Suggested Next Steps**
	• The business continuity/contingency plans (BCP) from Continuing Care at the provincial level were not received by DHAs early enough • Include ethics within planning • There was a lack of inclusion of hospice and palliative care, mental health and community services within planning • There is a lack of clarity regarding the use of N95 masks within Continuing Care (e.g., discrepancies in recommendations) • There is a need to test business continuity planning assumptions related to HR within Continuing Care (e.g., percentage of staff that can be ill for the Continuing Care system to function)	• Ensure the development and distribution of BCPs is done in a timely way • Ensure integration of hospice and palliative care within planning • Test HR business continuity plans for staff absences • Ensuring Continuing Care and respective unions are included within the Good Neighbour Protocol (to facilitate redeployment of Continuing Care staff)

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